This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for fabricating a non-volatile memory device, the method comprising:

providing a substrate;

forming an oxide layer overlying the substrate, the oxide layer having an amorphous surface structure;

forming a buffer layer ~~overlying~~ on the amorphous oxide layer after forming the oxide layer over the substrate;

thermally annealing the buffer layer to enhance an alignment of crystallites of the buffer layer;

forming a ferroelectric material overlying the substrate;

forming a gate layer overlying the ferroelectric material, the gate layer overlying a channel region; and

forming a first source/drain region adjacent to a first side of the channel region and a second source/drain region adjacent to a second side of the channel region.

2. The method of claim 1 wherein the channel region is about 1 micron and less.

3. The method of claim 1 wherein the ferroelectric material is a PZT bearing compound.

4. The method of claim 1 wherein the buffer layer is a magnesium bearing compound.

5. The method of claim 1 wherein the buffer layer is a magnesium oxide layer, the magnesium oxide layer being a barrier layer.

6. The method of claim 1 wherein the ferroelectric material has a thickness of less than about 1,000 Angstroms.

7. The method of claim 1 wherein the buffer layer has a thickness ranging from about 7 to 100 nanometers.

8. The method of claim 1 wherein the ferroelectric material has a thickness of about 100 Angstroms and greater.

9. The method of claim 1 wherein the ferroelectric material is PZT.

10. The method of claim 1 wherein the buffer layer is a barrier diffusion layer, the barrier diffusion layer substantially preventing diffusion between the ferroelectric material to the substrate.

11. The method of claim 1 wherein the buffer material is sputtered from a substantially pure magnesium target to form a magnesium oxide layer.

12. The method of claim 11 wherein the sputtering is maintained at a temperature greater than about 400 degrees Celsius or greater than about 500 degrees Celsius.

13. (Previously Amended) The method of claim 11 wherein the buffer layer is thermally annealed at a temperature of 800-1000 degrees Celsius for about 30 minutes.

14. The method of claim 1 wherein the ferroelectric material is highly oriented.

15. The method of claim 14 wherein the highly oriented material is a polycrystalline film.

16. (Previously Amended) The method of claim 1 wherein the ferroelectric material is substantially free from an amorphous structure.

17. The method of claim 15 wherein the polycrystalline film has a crystal structure of 100 angstroms and greater.

18. (Previously Amended) The method of claim 1 wherein the buffer layer is a template to provide an oriented growth of the ferroelectric material.

19. (Previously Amended) The method of claim 1 wherein the oxide layer is provided by a dry oxidation process comprising an oxygen bearing compound.

20. (Previously Amended) The method of claim 1 wherein the oxide layer passivates the surface of the substrate to protect the channel region.

21. (Currently Amended) A method for fabricating a non-volatile memory device, the method comprising:

providing a <u>semiconductor</u> substrate;

forming a gate oxide layer ~~first buffer layer overlying~~ on the substrate, the oxide layer having a non-crystalline structure;

forming a ~~second buffer~~MgO layer overlying the oxide layer after forming the oxide layer on the substrate ~~first buffer layer~~;

thermally annealing the second buffer layer to enhance an alignment of crystallites of the second buffer layer;

forming a ferroelectric material overlying the substrate;

forming a gate layer overlying the ferroelectric material, the gate layer overlying a channel region; and

forming first and second doped regions adjacent to first and second ends of the channel region.

22. Canceled.

23. The method of claim 21, wherein the oxide layer has an amorphous structure and the MgO layer has a crystal structure. ~~first buffer layer is an amorphous layer, and the second buffer layer is a highly oriented layer.~~

24. The method of claim 23, wherein the second buffer layer has a thickness of no more than 10 nm.

26. The method of claim 21 wherein the second buffer layer is thermally annealed at a temperature of 800-1000 degrees Celsius.

27. (New) The method of claim 21, wherein the MgO layer formed on the oxide layer is provided with a highly-oriented structure.

28. (New) The method of claim 27, wherein the MgO layer has a polycrystalline structure prior to the annealing step.

29. (New) A method for fabricating a non-volatile memory device, the method comprising:

providing a semiconductor substrate;

forming an oxide layer on the substrate, the oxide layer having a non-crystalline structure;

forming a MgO layer on the oxide layer, the MgO layer formed on the oxide layer having a highly-oriented structure;

forming a ferroelectric material overlying the substrate;

forming a gate layer overlying the ferroelectric material, the gate layer overlying a channel region; and

forming first and second doped regions adjacent to first and second ends of the channel region.

30. (New) The method of claim 29, further comprising:

thermally annealing the highly-oriented MgO layer to enhance an alignment of crystallites of the of the MgO layer.

31. (New) The method of claim 29, wherein the MgO layer is formed after the oxide layer is formed on the substrate.

32. (New) A method for fabricating a non-volatile memory device, the method comprising:

providing a semiconductor substrate;

forming an amorphous gate dielectric layer on the substrate;

forming a MgO layer on the amorphous dielectric layer after forming the dielectric layer on the substrate, the MgO layer having a highly-oriented structure; and

forming a ferroelectric layer overlying the MgO layer,

wherein the dielectric layer, MgO layer and ferroelectric layer are patterned to form a transistor.

33. (New) The method of claim 32, wherein the MgO layer has a crystalline structure.

34. (New) The method of claim 33, wherein the MgO has a polycrystalline structure.